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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,418	05/23/2001	Eddie L. Chang	N.C. 79,764	8463

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EXAMINER

PASTERCZYK, JAMES W

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,418

Applicant(s)

CHANG ET AL.

Examiner

J. Pasterczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 21-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-31 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/22/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. This Office action is in response to the amendment and IDS filed 4/22/04 and refers to the Office action mailed 10/22/03.

2. The prior art rejections of the previous Office action are withdrawn due to convincing argument. However, c.f. below for new formal and prior art grounds of rejection.

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the penultimate line states that phosphate is also hydrolysable by the catalyst, yet this moiety is omitted from l. 2. In l. 6 "chelators" would be better phrased --chelated metal ions-- since it is the metal ions which actually perform the hydrolysis reactions recited.

In claim 7, l. 2, change "catalytically active metal" to --chelated metal ion-- since the latter is a more accurate description. Also change "metal chelate" to --catalytically active--.

In claim 9, l. 2 delete "a support".

In claim 12, the phosphorus groups of l. 2 should match those of the last line.

In claim 15, l. 5, delete "and"; in l. 8 delete "one of the monomer or".

In claim 18, l. 3, change the first "and" to a comma.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Gustafson et al., J. Am. Chem. Soc., vol. 85, pp. 598-601 (1963) (hereafter referred to as

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Gustafson), Courtney et al., J. Am. Chem. Soc., vol. 79, pp. 3030-3036 (1957) (hereafter referred to as Courtney), or Wagner-Jauregg et al., J. Am. Chem. Soc., vol. 77, pp. 922-929 (1955) (hereafter referred to as Wagner-Jauregg), in view of Gryaznov et al., USP 4,394,294 (hereafter referred to as Gryaznov).

Each of the primary references discloses the invention substantially as claimed in their abstracts and "Introduction" sections.

However, none of the primary references discloses the use of a polymeric support for holding a nitrogenous base ligand, although the metals and the nitrogenous basic ligands are clearly disclosed as being used as catalysts for hydrolysis of organophosphorus compounds containing P=O double bonds.

However, Gryaznov teaches that in the field of catalysis it is conventional to support the active metal on a solid polymeric support having nitrogenous basic ligands covalently bound to the support through another chemical entity (col. 2, l. 22-39).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Gryaznov to the disclosures of any of the primary references with a reasonable expectation of obtaining a highly-useful immobilized catalyst for hydrolyzing compounds having P=O bonds with the benefit of higher catalytic activity with lower metal loading.

6. Claims 1-4, 7-11, 15-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courtney, Gustafson, Wagner-Jauregg and Gryaznov as applied to claims 1-4 and 7-11 above, and further in view of Singh et al., Mat. Res. Soc. Symp. Proc., vol. 501, pp. 199-207 (1998) (hereafter referred to as Singh).

The disclosures of the primary references have been discussed above.

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None of the references cited in paragraph 5 above discloses use of preorganized polymer matrices as the support material.

However, Singh teaches that preorganized polymer matrices that bind metal ions selectively are conventional in the art (abstract; scheme 1; figure 1).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Singh to the disclosures of the primary references with a reasonable expectation of obtaining a highly-useful supported hydrolysis catalyst with the expected benefit of the catalyst having shape specific pores allowing only particular metal ions and particular sized and shaped substrate molecules to react together.

7. Claims 1-11 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh, Courtney, Gustafson, Wagner-Jauregg and Gryaznov as applied to claims 1-4, 7-11, 15-16 and 18-20 above, and further in view of Giletto et al., USP 6,569,353 (hereafter referred to as Giletto).

The disclosures of the primary references have been discussed above.

None of the primary references discloses that the support may be a sorbent for the substrate molecules to be hydrolyzed.

However, Giletto teaches that compositions used to detoxify chemical warfare agents may include a sorbent material for the agent (abstract).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Giletto to the disclosures of the primary references with a reasonable expectation of obtaining a highly-useful chemical warfare agent detoxifying composition with the expected benefit of the material being able to absorb the agent as it is being neutralized.

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8. Claims 1-4 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courtney, Gustafson, Wagner-Jauregg and Gryaznov as applied to claims 1-4 and 7-11 above, and further in view of either of Hlatky, USP 6,040,261 (hereafter referred to as Hlatky), or Soga et al., USP 5,610,115 (hereafter referred to as Soga).

The disclosures of the primary references have been discussed above.

None of these references discloses that the polymeric composition may be made by first making the substrate, adding the ligand which bonds to the metal, then adding a metal compound whose metal atom then binds to the support-bonded ligand.

However, both Hlatky (abstract; examples) and Soga (abstract; structures; examples) teach that such a reaction scheme is conventional in the preparation of supported catalysts.

It would have been obvious to one of ordinary skill in the art to apply the teachings of either of Soga or Hlatky to the disclosures of the primary references with the expected benefit of the catalyst made being usable as its bulk for, i.e. without need for additional solvent.

9. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 4/22/04 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 8:30 to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

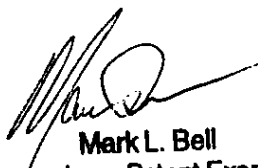
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Pasterczyk

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6/5/04



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